U.S. Air Force Electronic Systems Center

By

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Electronic Systems Center

A Leader in Command and Control Systems

The Electronic Systems Center (ESC) is a world leader in developing and fielding command and control systems. We manage more than 200 such programs that serve as the eyes and ears of war-fighting commanders. These advanced systems gather information on a myriad of subjects from enemy troop movements to control of an airborne armada. They enable commanders to cut through the fog of war and achieve decisive battlefield victories by helping them make informed decisions and quickly pass those decisions to troops on board aircraft or in the field.

Many of ESC's programs, such as Joint STARS, AWACS, Constant Source Intelligence Systems and the Airborne Battlefield Command and Control Center, performed well in Operation Desert Storm, and more recently in Operation Joint Endeavor in Bosnia. As the world enters a new century, ESC continues its Air Force leadership role for the development of command and control systems.

Our Programs

Today, ESC is working to acquire sophisticated systems dedicated to battle surveillance, data transmission and intuitive information display. In this regard, ESC is providing tomorrow's technology to America's warfighters today.

AWACS: The Next Generation

One of ESC's best known programs is the Airborne Warning and Control System, or AWACS. With a combat-proven track record for performance, AWACS is a popular system among our allies. ESC has designed a version of AWACS for the Japanese Self-Defense Force using the Boeing 767 airframe as a platform.

Another of ESC's premier programs is the Joint Surveillance Target Attack Radar System, or Joint STARS. Joint STARS, using a modified Boeing 707 as a platform, has a revolutionary radar system mounted in a canoe-shaped covering under the forward fuselage. Joint STARS provides Army and Air Force commanders with real-time data on ground targets such as tanks and armored personnel carriers.

Superior Intelligence

Providing warfighting commanders with a clear picture of the enemy's strengths and locations offers an intelligence capability that allows them to better predict when and where an enemy might strike. It also gives commanders the information needed to locate, assess and strike critical targets quickly.

ESC is developing numerous programs that rely on satellite imagery, airborne and fixed-site broadcast terminals, as well as mobile ground-based receivers to provide theater commanders with critical intelligence information that allows them to act within the enemy's decision cycle.

Force Protection

Physical security of our nation's military assets is another major thrust of ESC. The center is currently developing multiple programs for electronic surveillance, detection and identification of unauthorized intruders, increasing the effectiveness of U.S. Air Force security police. Among these programs are systems to protect two of the Air Force's most valuable assets, the F-117 stealth fighter and the B-2 stealth bomber.

Mission Planning

ESC has radically changed the way pilots plan and execute their missions. Today, ESC has automated total mission planning, from air tasking order to debrief. Pilots can now plan missions on a computer, accessing the latest weather, reconnaissance and enemy threat and target data. The Air Force Mission Support System, developed by ESC, includes a portable system designed to fully support deployment operations. ESC is also leading the way in developing joint mission planning systems, allowing the Air Force and its sister services to plan missions in concert with one another.

Information Warfare

Within today's information domain, events are seen and felt at the speed of light. If we can analyze, assess and act faster than our adversary, we will win. ESC is the Air Force Materiel Command's lead organization for research, development, test, fielding, and support for information warfare capabilities. The center is evaluating and fielding several information warfare products and services to support the warfighters' information operations mission.

Five Locations

ESC consists of five locations: Hanscom Air Force Base headquarters, the Standard Systems Center at Gunter Annex, Alabama, the 38th Engineering Installation Wing at Tinker Air Force Base, Oklahoma, Materiel Systems Group at Wright-Patterson Air Force Base, Ohio and Cryptologic Systems Group at Kelly Air Force Base, Texas.

Strategic Goals

ESC is changing the way it does business to keep pace with the rapidly advancing information technology.

Information technology leapfrogs every eighteen months, making last year's computers far less capable than those currently on the shelf. Similar advances are being made in software development and integration of software applications. Many military command and control systems use similar computer and communications technology and thus experience the same turnover times.

Taking Advantage of Technology

To ensure ESC sets the pace with technology, we have adopted strategic goals that include achieving acquisition cycles of eighteen months or less from program start to first item delivery; developing systems that are fully interoperable using the Defense Information Infrastructure common operating environment; and reducing the cost of command and control system acquisition. These goals will be accomplished by ESC pioneering the evolutionary spiral development process and using commercial off-the-shelf and government off-the-shelf products whenever possible.

To achieve these goals and capitalize on this technology window of opportunity, ESC is transforming its business practices to focus more clearly on achieving warfighter-desired battlefield effects. This shifts emphasis from stovepiped programs to an interoperable network of assets designed in harmony to meet specific warfighting needs.

Spiral Development

Spiral development, the essence of ESC's new way of acquiring systems, is an innovative method to field a system quickly using commercial and government off-the-shelf equipment with maximum user involvement throughout the process.

The initial system will meet the majority of the user's needs with equipment currently obtainable or a rapidly developed prototype, but will be upgraded with new capabilities and the latest software as they become available.

In eighteen months or less, these systems will be upgraded, tested by the user and delivered. For larger or more complex systems, the process may involve a series of short development cycles. During each of these cycles, mission capabilities will be increased, incremental functions added and further compliance with Defense Information Infrastructure and use of the common operating environment will be made.

Our Mission

Information superiority is one of the Air Force's six core competencies outlined recently in *Global Engagement: A Vision for the 21st Century Air Force*. In no other area is the pace and extent of technological change as great as in the realm of information. The volume of information in joint warfare is growing rapidly, and the ability of commanders to achieve dominant battlefield awareness, intelligence, communications, weather and navigation support.

ESC manages the development and acquisition of more than 200 electronic command and control systems. These systems gather and analyze information on potentially hostile forces, enabling commanders to make quick decisions and rapidly pass them on to their forces. ESC's systems help direct the muscle of America's airpower to the right place at the right time.

People Make the Difference

ESC consists of teams of professionals specializing in engineering, science, business management, acquisition and computers. We supervise the design, development, testing, production and initial deployment of command and control systems. ESC people are overseeing the integration upgrade of space command and control assets. We are developing electronic security systems to protect the Air Force's most valuable installations and assets. And, we are working with the Federal Aviation Administration to install new radar displays and improve air traffic control at major airports and bases around the world.

For More Information

For additional information on ESC, visit our web site at http:www.hanscom.af.mil

About the Author

Kevin Gilmartin is the Deputy Director of ESC public affairs and chief of media relations. He has worked in the Air Force public affairs career field for more than twenty-two years. Kevin is recognized as an exceptional writer, editor and presenter, receiving many prestigious awards through the years, including Air Force Outstanding Public Affairs Civilian for 1991. Kevin has earned the honor of Air Force Materiel Command Senior Public Affairs civilian an unprecedented three times, in 1994, 1996 and 1998. Additionally, he helped lead his office to win the Best in the Air Force honors for 1998. Kevin is an active member and supporter of the Air Force Association, currently serving as chapter secretary of the Paul Revere chapter, and having earned a National Air Force Association Medal of Merit. He is also active in the Armed Forces Communications and Electronics Association, serving as vice president for publicity of the Lexington-Concord chapter. The Armed Forces Communications and Electronics Association International recognized his efforts in 2000 with the Meritorious Service Medal.